CLAIMS

What is claimed is:

1. An integrated circuit comprising:

an amplifier formed on a semiconductor die, the amplifier having an output port with an output impedance; and

a bondwire electrically connecting the output port to an external conductor;

wherein the bondwire has a specified self-inductance and is operable to match the output impedance to a desired load impedance.

2. The integrated circuit of claim 1 wherein:

the amplifier is a radio frequency power amplifier.

3. The integrated circuit of claim 1 wherein:

the semiconductor die is a metal-oxide semiconductor die.

4. The integrated circuit of claim 1 wherein:

the semiconductor die is a gallium arsenide semiconductor die.

5. The integrated circuit of claim 1 wherein:

the semiconductor die is a bipolar semiconductor die.

6. A method for impedance matching comprising:

forming an amplifier on a semiconductor die, the amplifier having an output port with an output impedance; and

connecting an electrically conducting bondwire between the output port and an external conductor;

wherein:

the bondwire has a specified self-inductance and is operable to match the output impedance to a desired load impedance.

7. The method of claim 6 wherein:

the amplifier is a radio frequency power amplifier.

8. An integrated circuit comprising:

an amplifier formed on a semiconductor die, the amplifier having an output port with an output impedance;

a bondwire having a specified self-inductance and electrically connecting the output port to an external conductor; and

a capacitor having a specified capacitance formed on the semiconductor die and electrically connected between the output port and a ground, wherein:

the bondwire and the capacitor are operable to match the output impedance to a desired load impedance.

9. The integrated circuit of claim 8 wherein:

the amplifier is a radio frequency power amplifier.

10. The integrated circuit of claim 8 wherein:

the bondwire, the capacitor and the desired load impedance are jointly operable to resonate at a normal operating frequency of the integrated circuit.

11. The integrated circuit of claim 8 wherein:

the semiconductor die is a metal-oxide semiconductor die.

12. The integrated circuit of claim 8 wherein:

the semiconductor die is a gallium arsenide semiconductor die.

13. The integrated circuit of claim 8 wherein:

the semiconductor die is a bipolar semiconductor die.

14. A method for impedance matching comprising:

forming an amplifier on a semiconductor die, the amplifier having an output port with an output impedance;

connecting an electrically conducting bondwire having a specified self-inductance between the output port and an external conductor;

forming a capacitor having a specified capacitance on the semiconductor die and electrically connected between the output port and a circuit ground, wherein:

the bondwire and the capacitor are jointly operable to match the output impedance to a desired load impedance.

15. An integrated circuit comprising:

an amplifier formed on a semiconductor die, the amplifier having an output port with an output impedance;

a first bondwire having a first specified self-inductance, and electrically connecting the output port to a first external conductor;

a second bondwire having a second specified self-inductance, and electrically connecting the first external conductor to a node on the die;

a first capacitor having a first capacitance formed on the semiconductor die and electrically connected between the node and a ground;

a second capacitor having a second capacitance embodied on the semiconductor die and electrically connected between the node and a third bondwire, the third bondwire having a third specified self-inductance and electrically connecting the second capacitor to a second external conductor

wherein:

the first, second and third bondwires and the first and second capacitors are operable to match the output impedance to a desired load impedance.

16. The integrated circuit of claim 15 wherein:

the amplifier is a radio frequency power amplifier.

17. The integrated circuit of claim 15 wherein:

the first capacitor is connected to ground via a further bondwire.

18. The integrated circuit of claim 15 wherein:

the further bondwire connects to a thermal pad formed within the integrated circuit.

19. An integrated circuit comprising:

a semiconductor die;

a first bondwire having a first self-inductance electrically connected to the die and to an external conductor;

a second bondwire having a second self-inductance electrically connected to the die and to the external conductor, wherein:

the first and second bondwires are operable to act as an inductor to form at least a part of a circuit block comprised within the integrated circuit.

20. The integrated circuit of claim 19 wherein:

the circuit block is an analog circuit.

21. The integrated circuit of claim 19 wherein:

the circuit block is a radio frequency circuit.

22. The integrated circuit of claim 19 wherein:

the circuit block is selected from a list consisting of:

an intra-stage match, an input stage match, a tuned circuit, an oscillator, a filter, and a pre-selector for a radio receiver.

23. The integrated circuit of claim 19 further comprising:

a further bondwire connected between the die and a ground.

24. The integrated circuit of claim 19 further comprising:

a further bondwire connected between the die and a thermal pad.

25. An integrated circuit comprising:

a semiconductor die;

a first bondwire electrically connected to the die and a periphery pad;

a second bondwire electrically connected to the die and the periphery pad, wherein:

the first and second bondwires are operable to act as an autotransformer to form at least a part of a circuit block comprised within the integrated circuit.

26. An integrated circuit comprising:

a semiconductor die;

a first bondwire electrically connected to the die and a first periphery pad;

a second bondwire electrically connected to the die and a second periphery pad, wherein:

the first and second periphery pads are electrically connected, and

the first and second bondwires are operable to act as an autotransformer to form at least a part of a circuit block comprised within the integrated circuit.

27. An integrated circuit comprising:

a semiconductor die;

a first bondwire electrically connected to the die and a first periphery pad;

a second bondwire electrically connected to the die and a second periphery pad, wherein:

the first and second bondwires are operable to act as a transformer to form at least a part of a circuit block comprised within the integrated circuit.

28. A method for creating a passive component within an integrated circuit comprising:

connecting a bondwire between a semiconductor die and a periphery pad wherein the bondwire is operable to act as an inductor forming at least a part of a circuit block comprised within the integrated circuit.

29. The method of claim 28 further comprising:

connecting a further bondwire between the semiconductor die and the periphery pad.

30. A method for creating a passive component within an integrated circuit comprising:

connecting a first bondwire between a semiconductor die and a first periphery pad;

connecting a second bondwire between a semiconductor die and a second periphery pad electrically connected to the first periphery pad;

wherein the bondwires are jointly operable to act as an autotransformer forming at least a part of a circuit block comprised within the integrated circuit.

31. A method for creating a passive component within an integrated circuit comprising:

connecting a first bondwire between a semiconductor die and a first periphery pad;

connecting a second bondwire between a semiconductor die and a second periphery pad;

wherein the bondwires are jointly operable to act as a transformer forming at least a part of a circuit block comprised within the integrated circuit